

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V**

EPA Region 5 Records Ctr.



331216

**MEMORANDUM**

**DATE:** FEB 12 2003

**SUBJECT:** **ENFORCEMENT ACTION MEMORANDUM** - Request for a Non-Time-Critical Removal Action at the Greiner's Lagoon Site, Ballville Township, Sandusky County, Ohio

**FROM:** Thomas G. Williams  
Remedial Project Manager

**TO:** William E. Muno, Director  
Superfund Division

**THRU:** Margaret M. Guerriero, Acting Chief  
Emergency and Enforcement Response Branch

**I. PURPOSE**

The purpose of this action memorandum is to request and document approval of a non-time-critical (NTC) removal action at the Greiner's Lagoon Site ("GL" or the "Site") located in Ballville Township, Sandusky County, Ohio. The Site is a covered waste oil lagoon, 300 by 500 feet in size. The United States Environmental Protection Agency (U.S. EPA), has determined that the appropriate response action at the Site is the construction of a phytoremediation landfill cap (phyto cap) over the existing cap, as well as monitoring the groundwater and institutional controls on the Site. This action is necessary to abate the continuing imminent and substantial threat to public health and the environment from potential exposure to hazardous substances, including heavy metals, polychlorinated biphenyls (PCBs), and volatile and semivolatile organic chemicals (VOCs and SVOCs). The U.S. EPA has determined that this response action should be conducted as a removal due to the actual or potential exposure of nearby human populations or the food chain to hazardous substances from the Site. Since at least a six-month planning period is available before on-Site activities must begin, however, the proposed action would be a non-time critical removal.

The construction of the phyto cap is expected to eliminate or significantly reduce contaminated leachate releases from the landfill and to eliminate the primary exposure pathways which are direct contact (dermal and ingestion) with contaminated surface soil, sediment or surface water. Five years after construction of the phyto cap, U.S. EPA, in consultation with the Ohio Environmental Protection Agency (OEPA), will determine whether a significant reduction in the volume of leachate generated has occurred. If no significant reduction in the volume of and contaminant concentrations in leachate has occurred, then U.S. EPA, in consultation with OEPA, will evaluate whether additional response actions are necessary. This evaluation will include, but may not be limited to, collection of data, a human health risk assessment, and cost projections for any potential future remediation. Furthermore, if the switch grass cover, cotton or hybrid poplar trees fail to survive and flourish, additional flora must be installed that is capable of surviving and flourishing.

## **II. SITE CONDITIONS AND BACKGROUND**

U.S. EPA's response at GL will be a non-time critical removal action (CERCLIS ID# OHD980794622).

### **A. SITE DESCRIPTION**

#### **1. Removal Site Evaluation**

In 1983, GL was evaluated as a toxic, flammable waste oil Site that during periods of heavy rains overflowed into a drainage ditch to Indian Creek which flowed to the Sandusky River. The Site received a Hazard Ranking Score of 26.56. Several removals have been performed at the Site. Today, the Site is fenced and the waste oil is covered with sand and gravel washings from the cleaning and processing of sugar beets.

#### **2. Physical Location and Background**

The Site is located south of Fremont, Ohio, on County Road 181 about ½ mile west of Tiffin Road in Ballville Township, Sandusky County, Ohio (Figure 1). The Site was originally developed by Mr. Terry Little in 1954, and consisted of four lagoons occupying a 10 acre rectangular plot of land in an open field to store waste oil collected from nearby industry (Figure 2). A letter from the community, sent to Mr. Little in 1960, complained of odors emanating from the lagoon and of animals being killed or trapped by the oil. In response to the complaints from the community, Ohio Department of Health ordered Mr. Little to cease dumping oil into the four lagoons in 1970.

In 1972, Mr. Little traded the property to Beatrice and Edgil Collins in return for well drilling services. The Collins then sold the property to Mr. Nobel Caseman in 1973. During Mr. Caseman's period of ownership, a lawsuit was filed by members of the community against the original owner, Mr. Terry Little. By order of the Sandusky County Court of Common Pleas, Mr. Little was required to take measures to prevent any release of oil from the Site. In response, Mr. Little constructed dike systems around the four lagoons.

In the latter part of 1973, Mr. Caseman sold the property to Mr. Gary Greiner, the present owner. From 1973 until the latter part of 1974, Mr. Greiner used the Site for disposal of demolition debris. In November of 1974, the Ohio EPA ordered Mr. Greiner to clean up the Site. When Mr. Greiner failed to comply with the order, the case was referred to the Ohio Attorney General who filed a suit in the Sandusky Court of Common Pleas in 1975. A judgment was handed down in September 1980, ordering Mr. Greiner to clean up the Site by January 15, 1981. Mr. Greiner did not comply with the order.

There are approximately 35 primarily single-family residences within a one mile radius of the Site. The closest residences are ½ mile to the east along South Tiffin Road and ½ mile to the south along Deran Road. Row-crop agriculture is the main land use in the area.

In Ohio, the low income percentage is 30 and the minority percentage is 13. To meet the Environmental Justice (EJ) criteria, the area within 1 mile of the Site must have a population that's twice the state low income percentage and/or twice the State minority percentage. That is, the area must be at least 60% low-income or 26% minority. At this site, the low income is 16% and the minority is 3% as determined by Arcview or Landview III EJ analysis. Therefore, this Site does not meet the region's EJ criteria based on demographics identified in "Region 5 Interim Guidelines for Identifying and Addressing a Potential EJ Case, June 1998".

### 3. Site History

On June 16, 1981, heavy rains caused the lagoons to overflow. Oil contaminated with PCBs was released onto the adjoining farm land and into a nearby drainage ditch. Some of the contaminated oil flowed into Indian Creek via the drainage ditch and eventually to the Sandusky River. On June 17, 1981, the U.S. EPA reinforced the dikes around the lagoons. A dike was also built to contain a previous spill in a low area around the lagoons.

In addition, surface oil was collected from the lagoons and stored on-site in two tanks totaling 12,000 gallons. Liquid from Lagoons 3 and 4 was siphoned off and passed through a carbon contact unit that was constructed on-site in a 20,000 gallon tank. Effluent from the carbon unit was discharged to the nearby drainage ditch. Lagoon 4 was dewatered, filled and capped. Closure and grading of this lagoon was completed in June 1982, as a CERCLA-funded immediate removal action. Another action undertaken as part of this cleanup was the partial dewatering of Lagoon 3.

Between the summers of 1982 and 1985, Ohio EPA coordinated the delivery of several truckloads of "sugar beet fines," sand and gravel washings from the cleaning and processing of sugar beets. Lagoons 1 and 2 were filled in with this material.

In May 1986, Lagoon 3 again overtopped the western dike. U.S. EPA then undertook an immediate removal action to build up the freeboard of the lagoon and prevent the off-site migration of contaminants. Sandbags were used to construct a temporary retention dam and to raise the level of the western dike.

In the fall of 1987, the U.S. EPA undertook a removal action that consisted of the following:

- On-site treatment and discharge of impounded water;
- Stabilization of oils and sludges in Lagoon 3;
- Consolidation of Lagoon 3 stabilized material on former Lagoons 1 and 2;
- Covering of all stabilized material with soil; and
- Site regrading.

These removal action activities were completed in June, 1988. The actions completed to date have resulted in the stabilization of the Site, although there have been several occasions where contamination has leached from the Site.

The U.S. EPA's activities at the Site are summarized in its On-Scene Coordinator's Reports, CERCLA Removal Project, Greiner's Lagoon, April 1983 and for removal dates of August 26, 1987 through June 10, 1988. The available information about U.S. EPA's removal actions indicates that Lagoon 3 had an area of approximately 4,300 square yards and a depth of

about 4 feet. It is estimated that about 5,000 cubic yards of water, oil, and sludge were removed from Lagoon 3 during the U.S. EPA's actions. The Agency's activities at the Site indicated the presence of arsenic, barium, chromium, cobalt, lead, nickel, phenol, PCBs, and toluene in Site materials.

On July 30, 1991, The Lubrizol Corporation (Lubrizol) entered into an Administrative Order by Consent (AOC) with the U.S. EPA, Region 5, pursuant to Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) to undertake actions to produce an Engineering Evaluation/Cost Analysis (EE/CA).

During August 1991, Lubrizol arranged for the removal of the access road adjacent to the Site. As part of the road removal, a drainage ditch was relocated onto the Site, and a portion of the adjacent property was regraded to promote drainage. In addition, in late August 1991, Lubrizol arranged for the installation of a fence on the Site for security.

In June 1997 two areas of visible seepage were repaired at the site. A 20-foot by 20-foot area located along the sideslope of the northern lagoon and an area south of the mound were repaired. For the northern seep area, visibly impacted soils were pulled back into the sideslope. For both areas, clay was placed over the area and compacted, resulting in a two-foot layer of compacted clay. Topsoil was placed over the clay in a thickness of approximately one foot. The topsoil was seeded. For the northern seep area, an erosion mat was placed over the topsoil. Approximately 20 cubic yards of riprap were placed at the toe of the impacted area to hold the clay/topsoil in place.

In 1998, additional areas of small seeps were repaired at the site. A temporary cover was installed to repair the impacted area which measured approximately 60 feet by 60 feet. This area was repaired by grading the area smooth with a low ground-pressure bull dozer, and installing a layer of geotextile. The geotextile was anchored in a shallow trench around the impacted area. An 8-inch layer of clay was compacted in place using the dozer blade and tracks. After the clay was placed, a 6-inch layer of top soil was applied with the dozer and the area was seeded. The seeded area was covered with straw erosion mat to prevent erosion of the topsoil. Following repair of this area, several small seeps developed near the northeast corner and southwest corner of the temporary cover. These seeps were in two areas, each measuring 3 feet by 3 feet. These seeps were repaired using the same procedures.

During the temporary remedial activities, a crushed 500-gallon steel tank was unearthed. A viscous oily material covered the interior of the tank sidewalls. A small amount of the oil material dripped out of a hole in the tank and onto the ground surface in the immediate vicinity of the tank. The tank contents were placed onto one of the seep areas and the tank was cleaned. The tank was cut open with a torch and the cleaned tank was transported to a metal recycler.

#### 4. Release or Threatened Release into the Environment of Hazardous Substances or Contaminants

In 1996, Lubrizol contracted with Engineering Resources Management (ERM) to conduct an Engineering Evaluation and Cost Analysis (EE/CA) to confirm the findings made in previous investigations; to determine the current state of the Site; and to expand U.S. EPA's knowledge about possible hazardous substances at the Site and their effect upon the Site and adjacent areas. The EE/CA was released in May 2001.

The soil samples taken by ERM revealed elevated levels of contamination by inorganic and organic substances. Sediment samples taken did not indicate levels of hazardous substances considered to be unprotective except for acetone.

The analytical results of the soil samples revealed several organic and one semivolatile compounds. Eight inorganic compounds were detected at concentrations exceeding background levels. The following are the maximum concentrations for the most significant hazardous substances found in the soil at the GL Site: acetone 28 mg/kg; benzene 27 mg/kg; phenol 200 mg/kg at subsurface depths between 6 and 12 feet; PCBs 38 mg/kg; antimony just above background concentrations; cadmium 44 mg/kg; chromium 36.7 mg/kg; copper 52.5 mg/kg; lead 811 mg/kg; mercury 0.5 mg/kg; nickel 33.3 mg/kg; and zinc 2,470 mg/kg.

The EE/CA also evaluated groundwater at the Site. Acetone was detected in the shallow, perched, sand aquifer (Boring SM-8) at 170,000 µg/L (Figure 3) and acetone levels in on-site monitoring wells developed in the same aquifer ranged up to 58,000 µg/L (monitoring well MW-7); Benzene was detected in the perched sand unit in the waste disposal area and ranged from non-detect to 63 µg/L but exceeded the Maximum Contaminant Level of 5 µg/L, 4 out of 14 samples; Phenol was detected up to 320,000 µg/L in at on-site boring (SM-8) and 36,000 µg/L at an on-site monitoring well (MW-6).

## 5. NPL Status

The Site is not currently on the National Priorities List (NPL). However, U.S. EPA collected data during previous removals and the data indicated that the Site would not score high enough on the Hazard Ranking System to qualify for listing on the NPL. The preliminary Hazard Ranking System site score of 26.56 was based on onsite and off-site groundwater contamination and soil contamination.

## B. OTHER ACTIONS TO DATE

### 1. Previous Actions

As discussed earlier, U.S. EPA conducted several time critical removal actions at the Site to eliminate off-site releases and minimize direct contact with contaminated material. U.S. EPA conducted several small scale investigations and an Expanded Site Assessment. Based on this information on July 30, 1991, Lubrizol entered into an AOC with the U.S. EPA to conduct an EE/CA.

Previous actions taken by state and local governments are discussed below in Section C.1.

### 2. Current Actions

Lubrizol submitted an EE/CA which was released to the public in May 2001. On August 29, 2001 a public meeting was held at the Terra Community College to present the proposed Alternative, Alternative 5, which consisted of an OEPA clay cap, Ohio Administrative Code (OAC) 3745-27-11, in-situ soil (chemical) stabilization, groundwater monitoring and institutional controls. Oral comments were taken at the meeting and written comments were accepted from July 16, 2001 until August 30, 2001. Based on comments provided by local residents, OEPA, and the potentially responsible party (PRP) (Lubrizol), U.S. EPA now prefers Alternative 6. This alternative consists of a phytoremediation cap, groundwater monitoring and institutional controls.

On December 11, 2002 a public availability session was held at the Birchard Public Library to explain to local residents the reason for changing the remedy.

### **C. ROLE OF STATE AND LOCAL AUTHORITIES**

#### **1. State and Local Action to Date**

As stated previously, in November of 1974, the Ohio EPA ordered Mr. Greiner to clean up the Site. Because Mr. Greiner failed to comply with the order, the case was referred to the Ohio Attorney General who filed a suit in the Sandusky Court of Common Pleas in 1975. A judgment was handed down in September 1980, ordering Mr. Greiner to clean up the Site by January 15, 1981. Mr. Greiner did not comply with the order.

On April 11, 2002, a Health Consultation Report for the GL Site was released by the U.S. Department of Health and Human Services. The health evaluation had been performed under a cooperative agreement between the Ohio Department of Health and the Agency for Toxic Substances and Disease Registry. The report recommended the following:

1. Carry out the proposed remedial activities (Alternative 5) at the Greiner's Lagoon site. These actions should minimize or eliminate any future threats the site might pose to the public health of nearby residents.
2. Continue to monitor on-site groundwater to confirm that levels of contamination in the upper sand layer decline over time and to insure that the regional bedrock aquifer at the site remains unaffected by on-site contamination.

#### **2. Potential for Continued State/Local Response**

U.S. EPA expects OEPA will continue to assist in implementing the response actions proposed herein as well as any further action deemed necessary to control the release and potential release of hazardous constituents at the Site, although OEPA is deferring concurrence with the remedy until an evaluation is completed five years after completion of construction.

### **III. THREATS TO PUBLIC HEALTH or WELFARE and the ENVIRONMENT**

In accordance with Section 300.415 of the National Contingency Plan, U.S. EPA must evaluate certain factors to determine if a removal action is the appropriate response to a situation involving hazardous substances. After analyzing the specific factors set forth below, U.S. EPA has concluded that a non-time critical removal action should be conducted to control the release of hazardous substances from the Site. U.S. EPA's actions are necessary to protect human populations, wildlife, and the environment.

#### **A. THREATS TO PUBLIC HEALTH OR WELFARE**

The primary exposure pathways with the GL Site are direct contact (dermal and ingestion) with contaminated surface soil, sediment or surface water. Most of the fenced area is bare of vegetation and shows sign of erosion. During periods of dry weather, heavy winds from the broad, flat, surrounding area could create fugitive dust which could be inhaled. During times of high rainfall, exposure could also occur via surface water runoff. It is important to note that a clean soil

cover was placed on top of the fenced area as part of a U.S. EPA removal action in 1987. Thus, no affected material should be available for exposure, except for limited areas where the cover may have been breached. Seepage from the contaminated material had to be corrected in 1997 and 1998.

Based on the findings of the Streamlined Risk Evaluation (SRE), estimated carcinogenic risks for each human receptor population were below  $1 \times 10^{-6}$  for most pathways of exposure. Potential exposure with some affected media, i.e. onsite soil, resulted in estimates marginally above  $1 \times 10^{-6}$  but within U.S. EPA's risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ . The noncarcinogenic hazard indices estimated for off-site residents, adolescent trespassers, and construction workers were below the hazard index of 1.0. Potential exposures to on-site soil and on-site shallow groundwater by the construction worker resulted in noncarcinogenic indices at 2.5 and 1.2, respectively.

The closest residential wells are at least 0.5 miles east and south of the Site and are all cased into the bedrock. Monitoring in the bedrock aquifer at the Site indicates that contamination has not significantly affected the aquifer. As a result, even if site-related chemicals were to migrate off-site to area drinking water wells, it is unlikely that concentrations of these chemicals at the point of exposure (resident's well) would exceed any drinking water standards. In addition, sampling of on-site monitoring wells in 1998 indicated a significant decline in the levels of the contaminants of concern detected in the perched aquifer.

#### **B. THREATS TO THE ENVIRONMENT**

Surface water from the Site flows into an underground pipe which drains into a large drainage channel that empties directly into Indian Creek. Indian Creek is a channelized swale that drains mainly agricultural lands. Indian Creek flows northwest from the Site approximately 5 miles to the Sandusky River which has been designated as a State scenic river. Active agricultural lands surrounds Indian Creek with no buffer zone.

Birds that build nests above ground, rest on vegetation, gather food from the air (insects) would not be likely receptors. Moles, other burrowing rodents, and soil invertebrates are potential receptors. Birds such as robins, which consume soil invertebrates, or hawks, which consume rodents, are also possible receptors. However, no rodent burrows or soil invertebrates were observed at the Site. Aquatic organisms in the nearby drainage channel could also be affected during times of high rainfall.

Again, clean soil cover was placed on top of the fenced area as part of a U.S. EPA removal action in 1987. Thus, no affected material should be available for exposure, except for limited areas where the cover may have been breached. Seepage from the contaminated material had to be corrected in 1997 and 1998.

#### **IV. ENDANGERMENT DETERMINATION**

Given the Site conditions, the nature of the hazardous substances on-Site, the continued potential release of these substances into the potential human and ecological exposure pathways identified in the Streamlined Risk Evaluation (SRE) contained in the EE/CA, actual or threatened releases of hazardous substances from this Site may present an imminent and substantial endangerment to public health or welfare and the environment if not addressed by implementing the response action selected in this Action Memorandum.

## **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

### **A. PROPOSED ACTION**

#### **1. Proposed Action Description**

Alternative 6 from the EE/CA consists of the following: Hybrid poplar and cottonwood trees will be planted around the Site in two rows (Figure 4). The vegetative species to be used at the Site is switchgrass (*Panicum virgatum*). The area to be covered at the Site is 3.2 acres, which will be fenced. All existing vegetation will be cleared. Soil at the north side of the Site will be amended with fill soil down to two feet to improve soil quality in the soft areas. The entire Site will be amended with sulfur to lower pH. After sulfur addition, 12 inches of topsoil will be applied across the Site.

Ground water monitoring will be conducted for three years to monitor site specific ground water (i.e., confirm there are no significant changes in the ground water quality). After the first three years of performance monitoring, the analytical data will be evaluated to determine the frequency of and analytical parameters for additional monitoring. The details of the ground water monitoring program will be developed when the detailed design and operation and maintenance plans are prepared. In addition, one monitoring well will be installed east of monitoring well MW-13. The construction of the phytoremediation cap is expected to eliminate or significantly reduce contaminated leachate releases from the landfill. Five years after construction of the phytoremediation cap, U.S. EPA, in consultation with OEPA, will determine whether a significant reduction in the volume of leachate generated has occurred. If no significant reduction in the volume of and contaminant concentrations in leachate has occurred, then U.S. EPA, in consultation with OEPA, will evaluate whether additional response actions are necessary. This evaluation will include, but may not be limited to, collection of data, a human health risk assessment, and cost projections for any potential future remediation. Furthermore, if the switch grass cover, cotton or hybrid poplar trees fail to survive and flourish, additional flora must be installed that is capable of surviving and flourishing. Institutional controls, including deed restrictions will be placed on the Site property. A long-term (30-year) maintenance program is part of this alternative.

The response actions described in this action memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at GL which pose an imminent and substantial endangerment to human health and the environment. These response actions do not impose a burden on affected property. In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 117, U.S. EPA issued the EE/CA for public comment in May 2001 and established a public comment period from July 16, 2001 to August 30, 2001 to allow interested parties to comment on the EE/CA. The Responsiveness Summary (Attachment III) documents the U.S. EPA's response to comments received during the comment period and at the April 29, 2001 public meeting. These comments were evaluated prior to, and were considered in the determination of, the non-time critical removal action for the Site.



## 2. Contribution to Remedial Performance

The proposed non-time critical removal action is expected to significantly reduce the long-term threats associated with the GL Site, including the threats of ingestion of, inhalation of, and direct contact with the hazardous substances at the Site. Furthermore, performance monitoring of the various components of the remedy will allow U.S. EPA, in consultation with OEPA, to evaluate the potential need for any further remedial investigation or remedial action.

This action is not intended to actively remediate groundwater contamination. Although the GL Site is located in a rural area where residents rely on wells for drinking water, U.S. EPA believes that no wells are currently threatened by groundwater contamination at the Site.

## 3. Description of Alternative Technologies

The EE/CA evaluated based upon their relative technological and cost attractiveness, only three treatment technologies for the landfill contents: soil physical solidification, soil chemical stabilization, and phytoremediation. The following removal action technologies utilizing treatment as well as other approaches were evaluated in the EE/CA:

- Access Control
- Engineered Clay Cap
- OAC 3745-27-11 Cap
- Soil Physical Solidification
- Soil Chemical Stabilization
- Excavation
- Off-Site Landfilling
- Phytoremediation

## 4. Engineering Evaluation/Cost Analysis (EE/CA)

As noted in Section II.B.2, an EE/CA was released by U.S. EPA in May of 2001. U.S. EPA notified the PRP for this Site that U.S. EPA considered Alternative 5, which consisted of a OAC 4745-27-11 Cap, access control, in-situ soil (chemical) stabilization, groundwater monitoring and institutional controls to be the appropriate remedy for this Site. Based on comments provided by local residents, OEPA, and the PRP, the preferred Alternative has been revised to Alternative 6. The reason for changing the preferred Alternative was due to the risk estimates. Risk estimates were below  $1 \times 10^{-6}$  for most pathways of exposure. Some pathways were marginally above  $1 \times 10^{-6}$  but were within U.S. EPA's risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ . The only noncarcinogenic indices above 1.0 were for future on-site construction workers. Due to the limited risk posed by the Site and the cost difference between Alternatives 5 and 6, ( Alt.6 is \$5,273,000 less expensive than Alt.5 ) Alternative 6 became the preferred Alternative. Alternative

6 adequately addresses the direct contact risks and the releases of leachate to the off-site groundwater which could prevent future risks.

When evaluating the most appropriate response for a site, an EE/CA must consider the criteria of effectiveness, implementability and cost. Based upon these criteria, sampling results and the SRE, Alternative 6 is the preferred Alternative. The reduction in leachate volume is expected to result in a reduction in the current risk to human health and ecological areas near the Site. Because the response action requires the use of landfill cap technology, it can be implemented in approximately six months. Finally, the cost of implementing the response action is reasonable when compared to the associated reduction in risk. A more detailed description and discussion of the remedy is contained in the EE/CA.

#### 5. Applicable or Relevant and Appropriate Requirements (ARARs)

Pursuant to Section 300.415 (i) of the NCP, the proposed action will comply with Federal and State ARARs to the extent practicable considering the exigencies of the situation. A complete list of potential ARARs for the Site is provided in Appendix Q of the EE/CA.

#### 6. Project Schedule

Design and contractor procurement for the non-time critical removal action are expected to take approximately 12 months. The primary components of the non-time critical removal action are expected to be installed during approximately one six-month construction season.

#### 7. Post-Removal Site Control

Consistent with Section 300.415 (k) of the NCP, it is anticipated that the PRPs for the Site will perform all required post-removal site control activities required by the removal action, with EPA and OEPA oversight.

#### B. Estimated Costs

Design	\$ 175,000
Construction	
- Cap	\$ 124,500
- Site Work	\$ 255,000
- CM/CQA/Eng.	\$ 30,000
O&M (30 yr PW)	\$ 541,000
Contingency	\$ 58,450
	\$ 1,183,950

### VI. EXPECTED CHANGE IN THE SITUATION SHOULD THE ACTION BE DELAYED OR NOT TAKEN

If the proposed action is not taken or delayed, human and ecological receptors will continue to be exposed to landfill contaminants, including low levels of mercury, lead, and PCBs. Contaminants will continue to enter the into drainage channel that empties directly into Indian Creek at levels which will degrade the water quality of Indian Creek.

## VII. OUTSTANDING POLICY ISSUES

This response action implicates no outstanding policy issues.

## VIII. ENFORCEMENT

The PRPs for the GL Site were identified early in the process. The major PRP, Lubrizol has indicated a willingness to perform the removal action. Information concerning the confidential enforcement strategy for this Site is contained in the Enforcement Confidential Addendum (Attachment II).

## IX. RECOMMENDATION

This decision document represents the selected non-time critical removal action for the GL Site, located in Ballville Township, Sandusky County, Ohio. This decision document was developed in accordance with CERCLA as amended by SARA; the selected response action is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site. Attachment IV identifies the items that comprise the Administrative Record, upon which the selection of the non-time critical removal action is based.

Conditions at the GL Site meet the NCP Section 300.415(b)(2) criteria for a non-time critical removal. I recommend your approval of the proposed removal action.

APPROVE: William E. Muno Date 2/12/03  
William E. Muno, Director  
Superfund Division

DISAPPROVE: \_\_\_\_\_ Date \_\_\_\_\_  
William E. Muno, Director  
Superfund Division

### Attachments:

- I. Site Location Figures
- II. Enforcement Confidential Addendum - *exclude from cc's & bcc's*
- III. Responsiveness Summary
- IV. Administrative Record Index

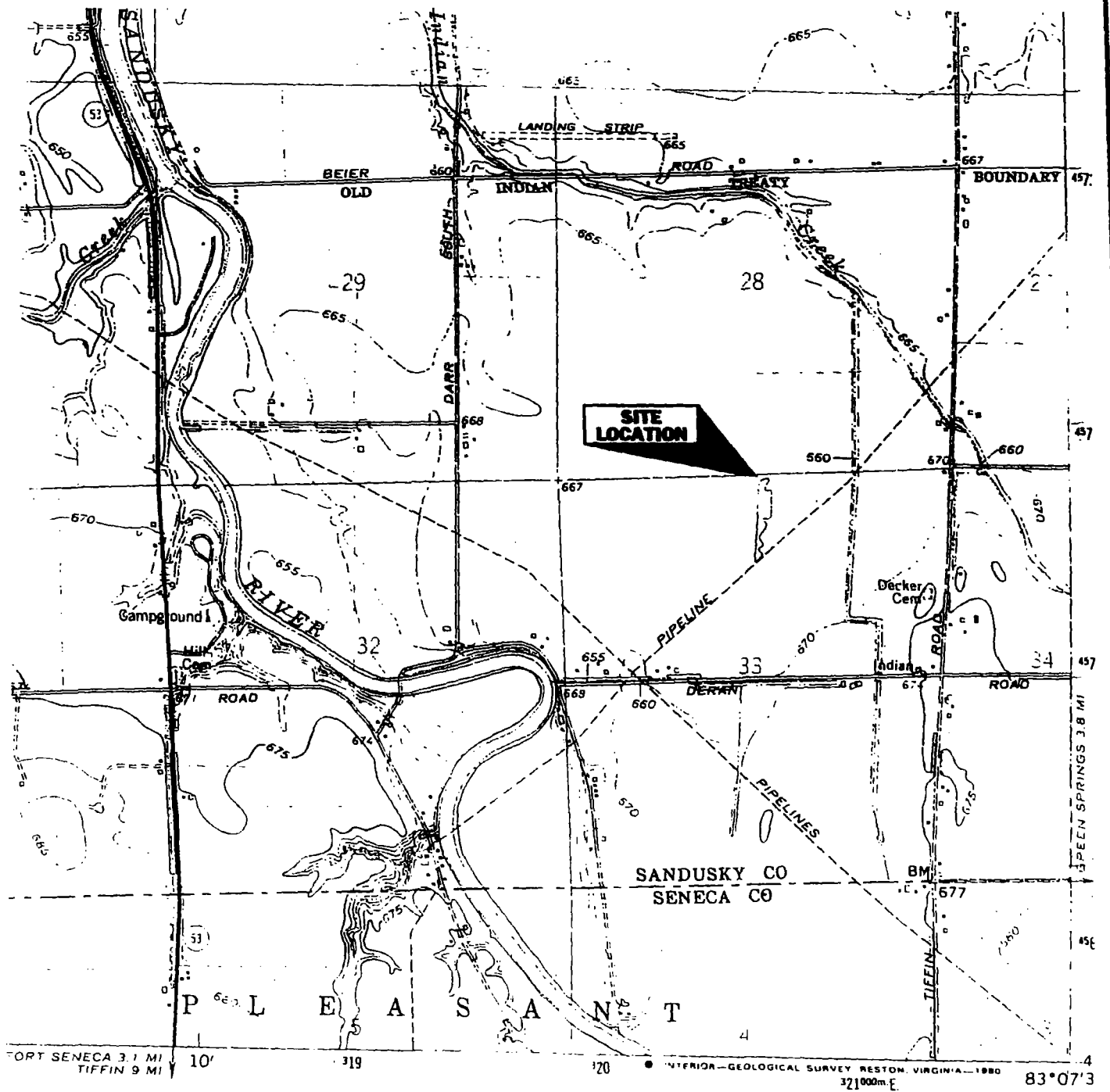
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D. Henne, U.S. DOI  
Ghassan Tafla, Ohio EPA

BCC PAGE

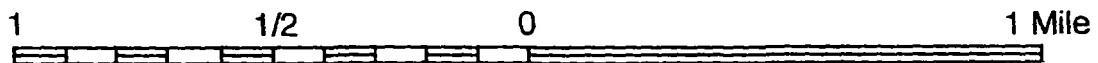
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NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

**ATTACHMENT I**



SCALE 1:24000



**ERM**

ERM  
Environmental Resources Management

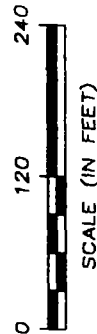
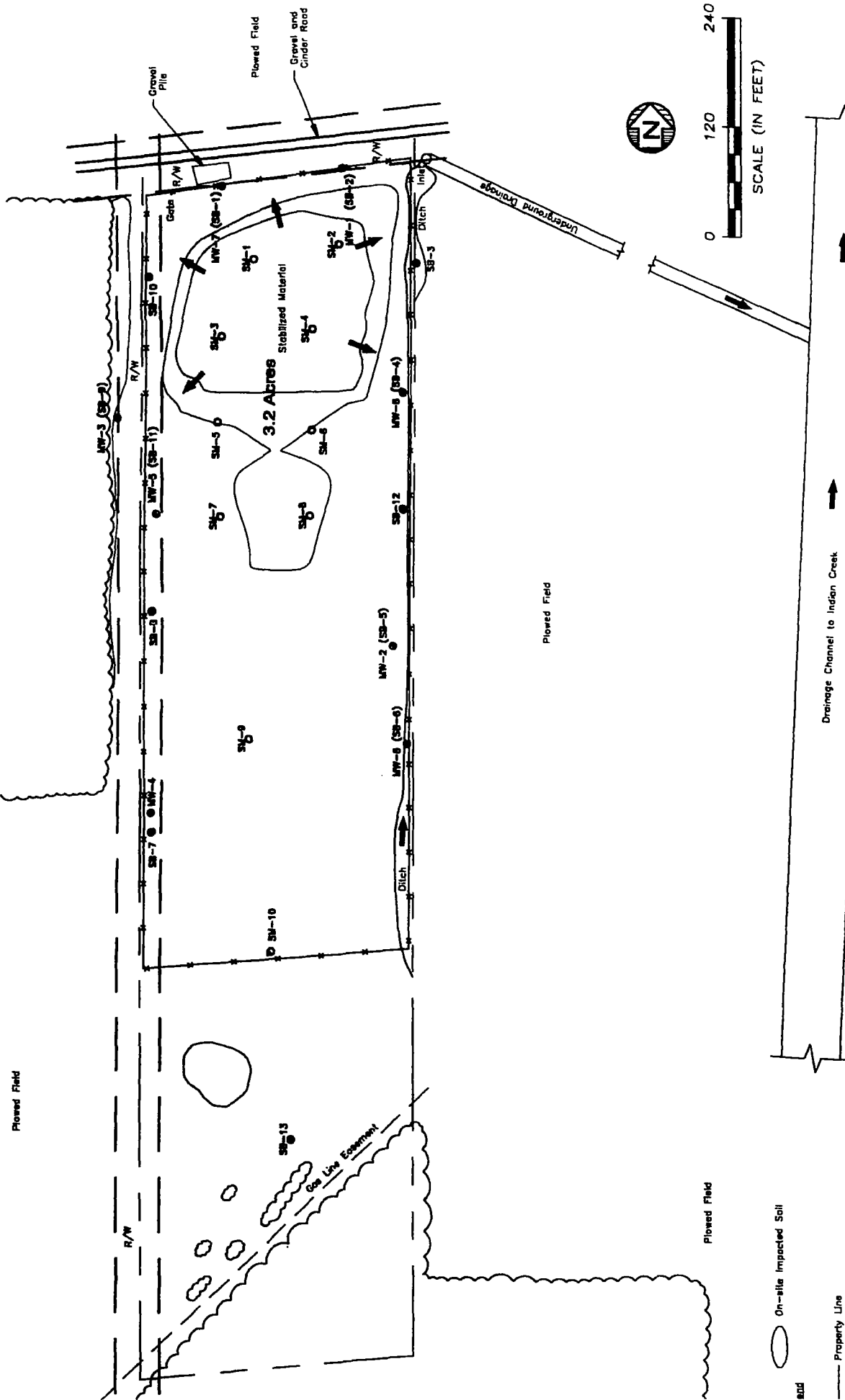
**SITE LOCATION MAP  
GREINER'S LAGOON SITE  
FREMONT, OHIO**

**FIGURE  
1**

SOURCE: USGS FREMONT WEST



# SITE MAP



- On-site Impacted Soil
- Property Line
- - - Fence
- Surface Water Flow Direction
- Monitoring Well Location
- Soil Boring Location
- Stabilized Material Boring Location



Drawn By  
GML  
CADD Review  
Date Drawn/Rev'd  
01/29/01

**LUBRIZOL**  
FREMONT, OHIO

Environmental Resources Management

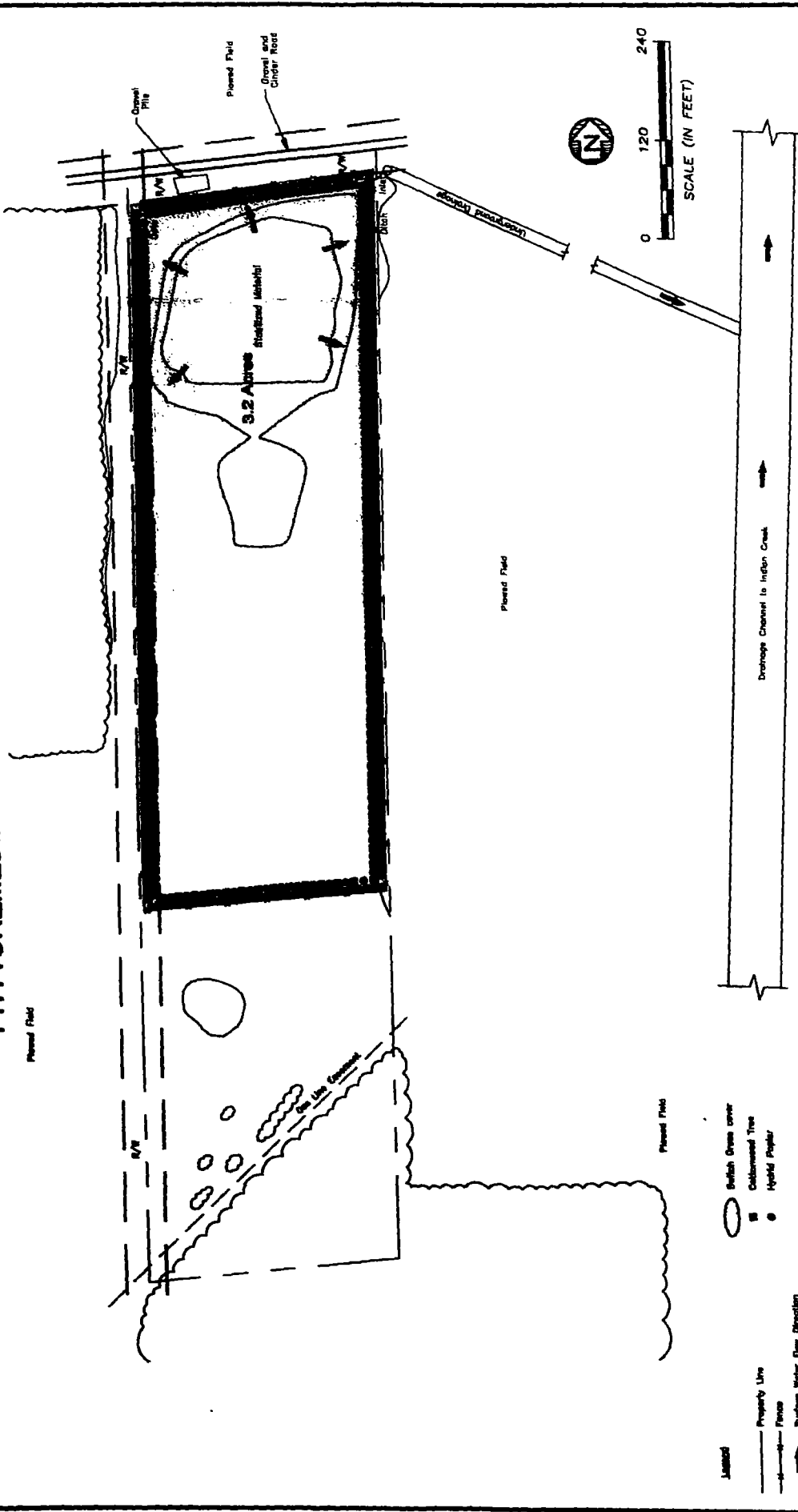
CHK'D

09928.00.01

FIGURE 3



# PHYTOREMEDIATION IMPLEMENTATION



Drawn By GML		<b>LUBRIZOL</b> FREMONT, OHIO Environmental Resources Management	CHR'D
CADD Review			08928.00.01
Date Drawn/Rev'd 01/28/01			FIGURE 4

## ATTACHMENT II

**ENFORCEMENT ADDENDUM**

**GREINER'S LAGOON SITE  
BALLVILLE TOWNSHIP, SANDUSKY COUNTY, OHIO**

**(REDACTED 1 PAGE)**

**ENFORCEMENT CONFIDENTIAL  
NOT SUBJECT TO DISCOVERY**

### ATTACHMENT III

## ATTACHMENT III

### RESPONSIVENESS SUMMARY

#### RESPONSE TO COMMENTS ON U.S. EPA's PROPOSED RESPONSE ACTION FOR GREINER'S LAGOON, FREMONT, OHIO

The public comment period for U.S. EPA's proposed response action at the Greiner's Lagoon (GL) Site opened on July 16, 2001 and closed on August 30, 2001. A public meeting was held on August 29, 2001 to discuss the results of the Engineering Evaluation/ Cost Analysis (EE/CA) document and U.S. EPA's proposed response action to the public.

U.S. EPA received a total of one set of written comments during the public comment period. Several comments were made orally at the public meeting. The comments are included in the Administrative Record for the GL Site. This responsiveness summary addresses these comments. Each response is divided into two portions, a summary of the comment and a response to the comment.

Oral comments raised during the public meeting for the Site remediation have been summarized below together with U.S. EPA's response to these comments.

**COMMENT:** A local resident stated that he owned land on three sides of GL and that he did not want runoff from the constructed cap to flood his land. He also stated that in the past his land was used for access to GL and that in the future he would prefer access to the Site from land other than his.

**RESPONSE:** Flooding to adjacent property is not a current problem and the cap will be designed so that it will not be a problem in the future. Access will have to be resolved to complete construction but consideration will be made to landowners that do not want access through their land if alternate cost-effective routes can be found.

**COMMENT:** Several residents expressed concern that the Site posed risks presently and would continue to pose risks in the future to the local community.

**RESPONSE:** As discussed in the Action Memorandum the risk estimates were below  $1 \times 10^{-6}$  for most pathways of exposure. Some pathways were marginally above  $1 \times 10^{-6}$  but were between  $1 \times 10^{-4}$  and  $1 \times 10^{-6}$ . The only noncarcinogenic indices above 1.0 were for future on-site construction workers. Additional information regarding current threats to the local community is presented here in an excerpt from The Health Consultation prepared by the Agency for Toxic Substances and Disease Registry (ATSDR) dated April 11, 2002:

Based on current conditions at the site, if the remedy preferred by U.S. EPA for this site is put in place (engineered cap and solidification/ stabilization of soils along with groundwater monitoring, Alternative 5), it is unlikely that the Greiner's Lagoon site would pose a significant public health threat to nearby residents in the future. No completed exposure pathways linking off-site residents to contaminants at the site have been documented. As a result, the site currently does not constitute a public health hazard to area residents.

It is also important to note that based on written comments from Lubrizol with regard to the risks posed by the Site the preferred Alternative was changed from Alternative 5 discussed in the Health Consultation, to Alternative 6, a phytoremediation cap with groundwater monitoring. The reason for changing the preferred Alternative was due to the risk estimates. Due to the limited risk posed by the Site and the cost difference between Alternatives 5 and 6 (6 is \$5,273,000 less expensive than 5) Alternative 6 became the preferred Alternative. These risk estimates were prepared by U.S. EPA and demonstrate that although the Site does pose risks, the risks are manageable by containing the contaminants on-site. While U.S. EPA understands the concerns expressed by the commentor, we will be overseeing the removal action to ensure that it protects the community.

Furthermore, five years after construction of the phytoremediation cap, U.S. EPA, in consultation with OEPA, will determine whether a significant reduction in the volume of leachate generated has occurred. If no significant reduction in the volume of and contaminant concentrations in leachate has occurred, then U.S. EPA, in consultation with OEPA, will evaluate whether additional response actions are necessary. Such evaluation will include, but may not be limited to, collection of data, a human health risk assessment, and cost projections for any potential future remediation.

**COMMENT:** One resident stated that local drinking water wells should be tested and that Lubrizol should pay for the testing.

**RESPONSE:** The Health Consultation prepared by the ATSDR stated the following:

Currently there is no evidence that the site has significantly impacted the bedrock aquifer. Sampling of the three bedrock wells that bracket the former waste disposal area in 1996 and 1998 provided no confirmed detections of site related chemical-of-concern in wells MW-1 and MW-2. Bedrock well MW-3 had a detection of acetone at 37 ppb in 1996 with no detections of the same chemical in 1998. The same well had estimated trace levels of both 4-methyl-2-pentanone and bis(2-ethylhexyl)phthalate in 1996 and no detections in 1998. As these are estimated values, it is questionable as to whether the low levels of chemicals detected are actually indicative of the presence of these chemicals in the bedrock aquifer under the site.

The closest residential wells are at least 0.5 miles east and south of the Site and are all cased into the bedrock. Calculated levels at which non-cancer adverse health effects might occur as the result of contact with VOCs and SVOCs found in the on-site groundwater range from 4,000 to 20,000 µg/L for adults and 1,000 to 6,000 µg/L for children. It is unlikely that these contaminants in the groundwater on-site would be able to migrate 0.5 miles without significant attenuation, diffusion, and dispersion of the contaminant plume. As a result, even if site-related chemicals were to migrate off-site to area drinking water wells, it is unlikely that concentrations of these chemicals at the point of exposure (resident's well) would be high enough to cause adverse health effects. In addition, sampling of on-site monitoring wells in 1998 indicated a significant decline in the levels of the contaminants of concern detected in the perched aquifer.

U.S. EPA agrees with this assessment of the conditions of the groundwater near the Site and believes that contaminant levels will continue to decrease after the removal action is fully implemented. As a result, U.S. EPA will not require any testing of residential drinking water wells. However, if at any time in the future U.S. EPA finds a threat to local drinking water wells based on monitoring at the Site, then testing of these wells will be performed during the re-evaluation of the response actions and until all threats are addressed. This does not preclude Lubrizol from testing local drinking water wells on a voluntary basis.

**COMMENT:** A resident stated that wildlife including ducks and birds and other fauna had perished in the past in the open lagoon, but as a result of previous removal activities which included neutralization of the oily waste and capping it that it may no longer pose a threat to the residents and wildlife and that no further action may be warranted.

**RESPONSE:** U.S. EPA agrees that the removal activities eliminated immediate threats but the phytoremediation cap will further reduce off-site impacts.

The written comment regarding the Site has been summarized below, together with U.S. EPA's response to this comment.

**COMMENT:** Lubrizol objects to and disagrees with the Proposed Plan and U. S. EPA's recommended cleanup alternative. Lubrizol believes that, consistent with the EE/CA, Selection of Alternatives 4 or 6 of the EE/CA offer the best balance of effectiveness, implementability, and cost and would be protective of human health and the environment, would focus on the acknowledged risk at the Site, would consider all of the required criteria, i.e., effectiveness, implementability, and cost, and would be consistent with the National Contingency Plan. Lubrizol disagrees with the U. S. EPA statement that only alternatives 3 and 5 would be protective.

**RESPONSE:** After reviewing the Health Consultation prepared by the ATSDR and a further review of the risk posed by the Site, U. S. EPA has agreed to modify the proposed response action at the Greiners Lagoon Site to Alternative 6, a phytoremediation landfill cap over the

existing cap, and groundwater monitoring. Furthermore, if the site conditions or risks change, the remedy will be modified accordingly.



## ATTACHMENT IV

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL ACTION

ADMINISTRATIVE RECORD  
FOR  
GREINER'S LAGOON SITE  
FREMONT, SANDUSKY COUNTY, OHIO

UPDATE #4  
DECEMBER 23, 2002

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	04/11/02	Ohio Department of Health/ ATSDR	U.S. EPA	Health Consultation for the Greiner's Lagoons Site	20
2	11/00/02	U.S. EPA	Public	Fact Sheet: Health Study Prompts Revision in Site Cleanup Plan for the Greiner's Lagoon Super- fund Site	2

UPDATE #5  
FEBRUARY 12, 2003

1	02/12/03	Williams, T., U.S. EPA	Muno, W., U.S. EPA	Enforcement Action Memorandum: Request for a Non-Time-Critical Removal Action at the Greiner's Lagoon Site (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED)	48
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U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL ACTION

ADMINISTRATIVE RECORD  
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GREINER'S LAGOON SITE  
FREMONT, SANDUSKY COUNTY, OHIO

UPDATE #3  
JULY 12, 2001

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	03/21/00	Tafla, G., Ohio EPA	Brubaker, D. Fremont, OH Resident	Letter re: Ohio EPA's Response to Telephone Inquiry Concerning the Greiner's Lagoon Site	2
2	07/20/00	Tafla, G., Ohio EPA	O'Grady, J., U.S.EPA	E-Mail Transmission re: Comments on the June 22, 2000 Treatability Testing Report for the Greiner's Lagoon Site	2
3	07/21/00	Bates, E., U.S. EPA	O'Grady, J., U.S.EPA	Memo re: Comments on the June 22, 2000 Treatability Testing Report for the Solidification of Soft Consistency Materials from the Greiner's Lagoon Site	7
4	07/24/00	O'Grady, J., U.S. EPA	Dragt, S., Environmental Resources Management	E-Mail Transmission re: U.S. EPA Comments on the June 22, 2000 Treatability Testing Report for the Solidification of Soft Consistency Materials From the Greiner's Lagoon Site, Sandusky County, Ohio	1
5	10/17/00	Nagam, R., TN & Associates, Inc.	O'Grady, J., U.S.EPA	E-Mail Transmission re: TN&A's Draft Comments on the PRP EE/CA Report for the Greiner's Lagoon Site	15
6	10/25/00	Tafla, G., Ohio EPA	O'Grady, J., U.S. EPA	E-Mail Transmission re: Ohio EPA's Comments on the September 15, 2000 Revised EE/CA Report for the Greiner's Lagoon Site	5

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
7	10/26/00	Bates, E., U.S. EPA	O'Grady, J., U.S. EPA	Memorandum re: Comments on the September 2000 EE/CA Report for the Greiner's Lagoon Site	4
8	11/17/00	O'Grady, J., U.S. EPA	Frato, K., Lubrizol Corporation	Letter re: U. S. EPA's Disapproval and Review Comments on the September 2000 Revised EE/CA Report for the Greiner's Lagoon Site w/ Attachments	24
9	12/11/00	Frato, K., Lubrizol Corporation	O'Grady, J., U.S. EPA	E-Mail Transmission re: Agenda for the December 14 2000 Meeting for the Greiner's Lagoon Site	1
10	12/14/00	O'Grady, J., U.S. EPA	Dragt, S., Environmental Resources Management	FAX Transmission re: Items for Discussion at the December 14, 2000 Meeting for the Greiner's Lagoon Site	2
11	12/14/00	Dragt, S., Environmental Resources Management	O'Grady, J., U.S. EPA	Fax Transmission re: Schematic for EE/CA Site Investigation at the Greiner's Lagoon Site	2
12	02/00/01	Environmental Resources Management	Lubrizol Corporation/ U.S. EPA	(1) Phytoremediation Feasibility Study, (2) Responses to U.S. EPA and Ohio EPA Comments on the September 2000 EE/ CA Report and (3) Cost Re-Evaluation on the September 2000 EE/CA Report for the Greiner's Lagoon Site	94
13	02/16/01	Dragt, S., Environmental Resources Management	O'Grady, J., U.S. EPA	Memorandum re: EE/CA Report for the Greiner's Lagoon Site	1
14	03/02/01	Frato, K., Lubrizol Corporation	O'Grady, J. & R. Nagle, U.S. EPA	Letter re: Monthly Status Report for February 2001 for the Greiner's Lagoon Site	2

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL ACTION

ADMINISTRATIVE RECORD  
FOR  
GREINER'S LAGOON SITE  
FREMONT, SANDUSKY COUNTY, OHIO

UPDATE #4  
DECEMBER 2, 2002

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	04/11/02	Ohio Department of Health/ ATSDR	U.S. EPA	Health Consultation for the Greiner's Lagoons Site	20
2	11/00/02	U.S. EPA	Public	Fact Sheet: Health Study Prompts Revision in Site Cleanup Plan for the Greiner's Lagoon Super- fund Site	2

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
15	03/09/01	Bates, E., U.S. EPA	O'Grady, J., U.S. EPA	Memorandum re: Comments on the February 2001 Phyto Remediation Feasibility Study for the Greiner's Lagoon Site	2
16	03/14/01	Christman, T., Ohio EPA	Tafla, G., Ohio EPA	Ohio EPA Interoffice Communication Memorandum re: Phytoremediation at the Greiner's Lagoon Site	2
17	04/02/01	Frato, K., Lubrizol Corporation	O'Grady, J. & R. Nagle, U.S. EPA	Letter re: Monthly Status Report for March 2001 for the Greiner's Lagoon Site	2
18	04/10/01	Frato, K., Lubrizol Corporation	O'Grady, J., U.S. EPA	E-Mail Transmission re: Agenda for April 17, 2000 Meeting for the Greiner's Lagoon Site	1
19	04/10/01	Tafla, G., Ohio EPA	O'Grady, J., U.S. EPA	Letter re: Ohio EPA's Comments on the February 2001 Phytoremediation Feasibility Study for the Greiner's Lagoon Site	5
20	04/16/01	Nagam, R., TN & Associates, Inc.	O'Grady, J., U.S. EPA	E-Mail Transmission re: TN&A's Comments on the February 2001 PRP EE/CA Phytoremediation Feasi- bility Study Review for the Greiner's Lagoon Site	6
21	04/17/01	O'Grady, J., U.S. EPA	Fratro, K., Lubrizol Corporation	E-Mail transmission re: TN&A, Ohio EPA and U.S. EPA's Comments on the Phytoremediation Feasi- bility Study for the Greiner's Lagoon Site	13
22	04/17/01	Fratro, K., Lubrizol Corporation	O'Grady, J., U.S. EPA	E-Mail Transmission re: Agenda for the April 17, 2001 Meeting for the Greiner's Lagoon Site	1
23	04/17/01	Bates, E., U.S. EPA	O'Grady, J., U.S. EPA	Memorandum re: Comments on the Phytoremediation Feasibility Study for the Greiner's Lagoon Site	2

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
24	04/25/01	Nagam, R., TN & Associates, Inc.	O'Grady, J., U.S. EPA	E-Mail Transmission re: Meeting Notes for the April 17, 2001 EE/CA Meeting for the Greiner's Lagoon Site	6
25	04/30/01	Frato, K., Lubrizol Corporation	O'Grady, J., U.S. EPA	Letter re: Monthly Status Report for April 2001 for the Grenier's Lagoon Site	2
26	05/00/01	Enironmental Resources Management	U.S. EPA	Engineering Evaluation/ Cost Analysis Report for the Greiner's Lagoon Site: Volume 1 of 2 (Text, Tables and Plates)	1027
27	05/00/01	Enironmental Resources Management	U.S. EPA	Engineering Evaluation/ Cost Analysis Report for the Greiner's Lagoon Site: Volume 2 of 2 (Appendices A-Q)	252
28	05/17/01	Frato, K., Lubrizol Corporation	O'Grady, J., U.S. EPA	Letter re: Lubrizol's Responses to U.S. EPA, Ohio EPA and TN&A's Comments on the February 2001 EE/CA Report for Greiner's Lagoon Site	45
29	06/29/01	Klawender, A., TN & Associates, Inc.	O'Grady, J., U.S. EPA	E-Mail Transmission re: TN&A's Comments on the May 2001 Final EE/CA Report for the Greiner's Lagoon Site	8
30	07/03/01	Tafla, G., Ohio EPA	O'Grady, J., U.S. EPA	E-Mail Transmission re: Ohio EPA's Comments on the May 2001 Revised EE/CA Report for the Greiner's Lagoon Site	3
31	07/05/01	Bates, E., U.S. EPA	O'Grady, J., U.S. EPA	E-Mail Transmission re: Comments on the EE/CA Report for the Greiner's Lagoon Site	1

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32	07/09/01	Tafla, G., Ohio EPA	O'Grady, J., U.S. EPA	E-Mail Transmission re: Ohio EPA's Additional Comments on the May 2001 Revised EE/CA Report for the Greiner's Lagoon Site	4
33	00/00/00	O'Grady, J., U.S. EPA	Dragt, S., Environmental Resources Management	E-Mail Transmission re: U.S. EPA's Approval, with Modifications, of the Solidification Treata- bility Study Work Plan for the Greiner's Lagoon Site	1
34	07/00/01	U.S. EPA	Public	Proposed Plan for Cleanup of the Greiner's Lagoon Site	8



U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL ACTION

ADMINISTRATIVE RECORD  
FOR  
GREINER'S LAGOON SITE  
FREMONT, SANDUSKY COUNTY, OHIO

UPDATE #4  
DECEMBER 2, 2002

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1	04/11/02	Ohio Department of Health/ ATSDR	U.S. EPA	Health Consultation for the Greiner's Lagoons Site	20
2	11/00/02	U.S. EPA	Public	Fact Sheet: Health Study Prompts Revision in Site Cleanup Plan for the Greiner's Lagoon Super- fund Site	2

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UPDATE #2  
OCTOBER 22, 1998

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	03/30/88	U.S. EPA/ OSWER	U.S. EPA	Memorandum: Outline of Engineering Evaluation/ Cost Analysis (EE/CA) Guidance	9
2	11/29/89	Environmental Resources Management (ERM)-Midwest, Inc.	The Lubrizol Corporation	Proposed Preliminary Design Investigation: Scope of Work Summary for the Greiner's Lagoon Site	7
3	07/18/91	Harris, T., The Lubrizol Corporation	Nagle, R., U.S. EPA	Letter Forwarding the Attached Executed Copy of the Administrative Order by Consent for the Greiner' Lagoon Site	16
4	08/26/91	Wilson, J., Lubrizol Petroleum Chemicals Company	Guria, P., U.S. EPA	Letter Forwarding the Attached Draft EE/CA Work Plan Outline for the Greiner's Lagoon Site for U.S. EPA Review	11
5	09/26/91	Wilson, J., Lubrizol Petroleum Chemicals Company	Guria, P., U.S. EPA	Cover Letter Forwarding the EE/CA Work Plan for the Greiner's Lagoon Site	188
6	12/24/91	McIntosh, J., Ohio EPA	Guria, P., U.S. EPA	Letter: OEPA's Comments on the EE/CA Work Plan for the Griener's Lagoon Site	4
7	01/23/92	McIntosh, J., Ohio EPA	Guria, P., U.S. EPA	Letter: OEPA's Comments on the Quality Assurance Project Plan (QAPP) for the Greiner's Lagoon Site	1
8	04/13/92	Guria, P., U.S. EPA	Wilson, J., The Lubrizol Corporation	Letter re: U.S. EPA's Comments on the EE/CA Work Plan for the Greiner's Lagoon Site	12

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9	05/27/92	Wilson, J., Lubrizol Petroleum Chemicals Company	Guria, P., U.S. EPA	Letter re: Lubrizol's Response to U.S. EPA's Comments on the EE/CA Work Plan for the Greiner's Lagoon Site	15
10	05/29/92	McIntosh, J. Ohio EPA	Guria, P., U.S. EPA	Telephone Memorandum re: Update on Activities at the Greiner's Lagoon Site	1
11	05/29/92	Guria, P., U.S. EPA	McIntosh, J., Ohio EPA	Cover Letter Forwarding Lubrizol's Response to U.S. EPA's Comments on the EE/CA Work Plan for the Greiner's Lagoon Site	1
12	07/09/92	DeNiro, P. ERM-Midwest, Inc.	Guria, P., U.S. EPA	Cover Letter Forwarding the EE/CA Work Plan for the Greiner's Lagoon Site	1
13	01/08/93	Onyia, A., Ohio EPA/ DERR	Guria, P., U.S. EPA	Letter: OEPA's Review of the EE/CA Work Plan for the Greiner's Lagoon Site	3
14	06/17/93	Guria, P., U.S. EPA	DeNiro, D., ERM-Midwest, Inc.	Letter re: U.S. EPA/ OEPA's Comments on the July 10, 1992 Revised EE/CA Work Plan for the Greiner's Lagoon Site (UNSIGNED)	4
15	01/27/95	Guria, P., U.S. EPA	Wilson, J., Lubrizol Petroleum Chemicals Company	Letter re: Change of On-Scene Coordinator for the Greiner's Lagoon Site	1
16	09/19/95	Kay, R., U.S. EPA/ Technical Support Section (TSS)	O'Grady, J., U.S. EPA	Memorandum re: TSS' Review of the July 10, 1992 EE/CA Work Plan for the Greiner's Lagoon Site	6
17	09/21/95	Moazed, A., Ohio EPA	O'Grady, J., U.S. EPA	Fax Transmission re: September 20, 1995 Recon- naissance Field Notes for the Greiner's Lagoon Site	2

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18	10/04/95	Baumann, A., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum re: TSS' Comments on the Health and Safety Plan (HASP) for the Greiner's Lagoon Site	3
19	10/05/95	Wilson, J., Lubrizol Petroleum Chemicals Company	O'Grady, J., U.S. EPA	Letter Forwarding (1) Engineering Layout/Site Plan Figure and (2) March 21, 1987 Aerial Photograph for the Greiner's Lagoon Site	3
20	10/10/95	DeNiro, D., ERM-Midwest, Inc.	O'Grady, J., U.S. EPA	Letter: ERM's Response to U.S. EPA's June 17, 1993 Comments on the EE/ CA Work Plan for the Greiner's Lagoon Site	6
21	10/13/95	Chapman, J., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum: TSS' Comments on the July 10, 1992 EE/ CA Work Plan for the Greiner's Lagoon Site	2
22	10/17/95	Moazed, A., Ohio EPA	Wilson, J., Lubrizol Petroleum Chemicals Company	Letter: OEPA's Comments on the EE/CA Work Plan for the Greiner's Lagoon Site	5
23	10/18/95	Kay, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum: TSS' Review of ERM's Response to U.S. EPA's June 17, 1993 Comments on the July 10, 1992 EE/CA Work Plan for the Greiner's Lagoon Site	2
24	10/26/95	U.S. EPA	File	Outline re: Order and Issues for Discussion at the October 26, 1995 Meeting Concerning the Greiner's Lagoon Site w/ Attached Sign-In Sheet	2

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25	10/30/95	O'Grady, J., U.S. EPA	Wilson, J., Lubrizol Petroleum Chemicals Company	Letter Transmitting the Final Draft Version of the October 26, 1995 Meeting Notes on the July 10, 1992 Revised EE/CA Work Plan for the Greiner's Lagoon Site	29
26	11/01/95	Wilson, J., Lubrizol Petroleum Chemicals Company	O'Grady, J., U.S. EPA	Letter re: Lubrizol's Corrections to October 26, 1995 Meeting Notes	5
27	11/08/95	O'Grady, J., U.S. EPA	Wilson, J., Lubrizol Petroleum Chemicals Company	Cover Letter Forwarding Five Documents as Examples of (1) Streamlined Risk Evaluation from the Human Health Perspective, (2) the EE/CA and (3) the On-Scene Coordinator's Report (HANDWRITTEN)	2
28	11/09/95	Byvik, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum: TSS' Review of the Draft Quality Assurance Project Plan (QAPP) for the EE/CA Site Investigation at the Greiner's Lagoon Site	6
29	11/13/95	O'Grady, J., U.S. EPA	Wilson, J., Lubrizol Petroleum Chemicals Company	Letter re: Final Version of the October 26, 1995 Meeting Notes	12
30	11/14/95	Byvik, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum: TSS' Review of the Draft Standard Operating Procedures (SOPs) from Quanterra- North Canton for the EE/CA Site Investigation at Greiner's Lagoon Site	5
31	11/30/95	O'Grady, J., U.S. EPA	Dragt, S., ERM-Midwest, Inc.	FAX Transmission re: Proposed Bedrock Well Construction for the Greiner's Lagoon Site (ANNOTATED)	5

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32	12/01/95	Kay, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum re: Procedures for Installation of Monitoring Wells in the Bedrock at the Greiner's Lagoon Site	1
33	12/01/95	Kay, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum re: TSS' Review of Procedures for Installation of Monitoring Wells in the Bedrock at the Greiner's Lagoon Site	2
34	12/21/95	DeNiro, D., Environmental Resources Management (ERM), Inc.	O'Grady, J., U.S. EPA	Cover Letter Forwarding the Revised EE/CA Work Plan for the Greiner's Lagoon Site	1
35	01/10/96	O'Grady, J., U.S. EPA	Wilson, J., Lubrizol Petroleum Chemicals Company	Water Resources Investi- gations Report 91-4024: Geohydrology and Quality of Water in Aquifers in Lucas, Sandusky, and Wood Counties, North- western Ohio (Breen & Dumouchelle: U.S. Geo- logic Survey, 1991) w/ Cover Letter	256
36	01/11/96	Kay, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum re: TSS' Review of the December 21, 1995 EE/CA Work Plan for the Greiner's Lagoon Site	5
37	02/00/96	The Lubrizol Corporation	U.S. EPA	December 1995 EE/CA Work Plan (Revised) for the Greiner's Lagoon Site	231
38	02/15/96	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Letter Forwarding Revised Sections of the December 1995 EE/CA Work Plan for the Greiner's Lagoon Site	7
39	02/20/96	Kay, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	E-Mail Transmission re: TSS' Comments on the EE/CA for the Greiner's Lagoon Site	1

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
40	02/27/96	Byvik, R., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum re: TSS' Approval of the First Revision to the Quality Assurance Project Plan for the EE/CA Site Investigation at the Greiner's Lagoon Site	2
41	02/28/96	Harris, T., The Lubrizol Corporation	O' Grady, J. & R. Nagle; U.S. EPA	Letter re: Replacement of Project Coordinator for the Greiner's Lagoon Site	1
42	02/28/96	O'Grady, J., U.S. EPA	Harris, T., The Lubrizol Corporation	Letter re: U.S. EPA's Approval of the Revised February 1996 EE/CA Work Plan for the Greiner's Lagoon Site	1
43	04/11/96	Ward, N., The Lubrizol Corporation	O, Grady, J. & R. Nagle; U.S. EPA	Letter Forwarding Attached Signature Page for the Quality Assurance Project Plan for the Greiner's Lagoon Site	2
44	06/18/96	DeNiro, D. & S. Dragt; ERM, Inc.	O'Grady, J., U.S. EPA	Memorandum re: (1) Soil/Aqueous Analytical Results and (2) List of Soil Sample Indicator Chemicals for the Greiner's Lagoon Site	39
45	06/21/96	DeNiro, D. & S. Dragt; ERM, Inc.	O'Grady, J., U.S. EPA	Memorandum re: Revised List of Soil Sample Indicator Chemicals for the Greiner's Lagoon Site	2
46	11/06/96	DeNiro, D. & S. Dragt; ERM, Inc.	O'Grady, J., U.S. EPA	Technical Memorandum: Laboratory Results of Phase II Field Investi- gation and Proposed Additional Work for the EE/CA at the Greiner's Lagoon Site	40
47	11/26/96	ERM, Inc.	Ohio EPA	ERM-Fast Quality Assur- ance Plan for the Greiner's Lagoon Site	161

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48	12/23/96	Gallis, D. & D. DeNiro; ERM, Inc.	Moazed, A., Ohio EPA	Memorandum re: ERM's Response to OEPA's December 9, 1996 Comments Concerning the EE/CA ERM-Fast QAP	2
49	03/26/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Memorandum re: Updated Schedule for the Comple- tion of the EE/CA for the Greiner's Lagoon Site	2
50	05/02/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Letter Forwarding Attached Summary of the Risk Assessment and Removal Action Objectives for the Greiner's Lagoon Site	20
51	05/16/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Letter re: Geoprobe Sampling Analytical Results for the Greiner's Lagoon Site	16
52	05/29/97	Chapman, J., U.S. EPA/ TSS	O'Grady, J., U.S. EPA	Memorandum re: TSS' Comments on the May 2, 1997 Risk Assessment Results and Removal Action Objectives Report for the Greiner's Lagoon Site	2
53	06/04/97	Moazed, A., Ohio EPA	O'Grady, J., U.S. EPA	Letter: OEPA's Comments on the Streamlined Risk Evaluation Memorandum for the Greiner's Lagoon Site	5
54	06/13/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA & A. Moazed, Ohio EPA	Memorandum re: Seep Repair at the Greiner's Lagoon Site	1
55	06/13/97	Pullen, L., U.S. EPA	O'Grady, J., U.S. EPA	Memorandum re: Draft Comments on the Risk Assessment for the Greiner's Lagoon Site	1



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56	06/19/97	Moazed, A., Ohio EPA	O'Grady, J., U.S. EPA	E-Mail Transmission re: OEPA's Final Comments on the Streamlined Risk Evaluation for the Greiner's Lagoon Site	5
57	07/17/97	DeNiro, D. & S. Dragt, ERM, Inc.	O'Grady, J., U.S. EPA & A. Moazed, Ohio EPA	FAX Transmission re: ERM's Approach for Surface Water and Sedi- ment Sampling at the Greiner's Lagoon Site	6
58	09/26/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA & A. Moazed, Ohio EPA	Memorandum re: Surface Water/Sediment Sampling Results for the Greiner's Lagoon Site	9
59	10/15/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA & A. Moazed, Ohio EPA	Memorandum re: Submittal of the Draft EE/CA for the Greiner's Lagoon Site	1
60	11/11/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Cover Memorandum Trans- mitting the EE/CA for the Greiner's Lagoon Site	1
61	12/08/97	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Memorandum Forwarding Attached Tables: (1) Removal Action Alterna- tives Array and (2) Comparative Cost of Alternatives for the November 1997 EE/CA Report for the Greiner's Lagoon Site	3
62	01/22/98	Moazed, A., Ohio EPA	O'Grady, J., U.S. EPA	Letter: OEPA's Comments on the EE/CA for the Greiner's Lagoon Site w/ Attached Ohio ARARs for the Greiner's Lagoon Removal Action	39
63	02/11/98	O'Grady, J., U.S. EPA	Ward, N., The Lubrizol Corporation	Letter re: U.S. EPA/ OEPA's Comments on the November 1997 EE/CA for the Greiner's Lagoon Site	18

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64	05/26/98	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Letter re: Lubrizol's Request for a Meeting with U.S. EPA/OEPA Concerning Agencies' Comments on the EE/CA for the Greiner's Lagoon Site	1
65	07/16/98	O'Grady, J., U.S. EPA	Ward, N., The Lubrizol Corporation	Letter re: U.S. EPA's Request for Lubrizol's Response to U.S. EPA/ OEPA's February 11, 1998 Comments on the EE/CA for the Greiner's Lagoon Site	2
66	07/23/98	DeNiro, D., ERM, Inc.	O'Grady, J., U.S. EPA	Letter re: Lubrizol's Response to U.S. EPA/ OEPA's February 11, 1998 Comments on the EE/CA for the Greiner's Lagoon Site	71



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ICHE/FRAME	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCUMENT NUMBER
1243	88/00/00		On Scene Coordinator's Report with Selected Appendices:  A - Action Memos (24 pgs) B - Verbal Notifications/Potentially Responsible Party (PRP) (7 pgs) C - Delivery Orders/Emergency Response Cleanup Services (ERCS) (22 pgs) E - Site Safety Plan/ENC Personnel Training (174 pgs) L - Site Log Record 1 & 2 (221 pgs) M - Activity Log (62 pgs) S - Discharge Water Sampling & Data (10 pgs) T - Air Monitoring Plan & Data (17 pgs) U - Soil Sampling Plan & Data (61 pgs) V - Photo Log/ Maps (57 pgs) W - Correspondence (Phone) (79 pgs) Z - Emergency Action Plan (50 pgs) BB - Sample Reports (118 pgs) CC - Water Criteria (14 pgs) DD - Water Treatment Cost (11 pgs) EE - Split Spoon Core Report (45 pgs) FF - Analytical Reports (275 pgs)	Edward C. Burk, Jr. USEPA		Reports/Studies	1

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2A1	6	83/02/28	Finding that samples whose results are detailed in the attached memos (dated 8/12 and 8/17/81) were collected on 6/23/81. These samples were tested for PCB's, metals and various organics.	Joe Fredle-USEPA	Ken Marsh-ORPA	Communication Record 1	
2A7	2	87 10 05	Summary of conversation with Bob Peters of Wadsworth re: "Methods & extractions used on PCB's: soils vs sludge vs soils vs H2O: wetweight vs. dry".			Communication Record 2	
2A9	1	'85 05 13	Results of samples taken from the lagoons on 4 to '85.	Charles A. Hull-ORPA	J. Mooney-Eastman,	Stichter Correspondence	3.
2A11	1	84 11 13	Letter stating that the results of analysis of samples collected from the water and bottom sediments of the lagoons indicate that it would not be desirable to discharge the the contents of the lagoons into Indian Creek. Letter also states that some other corrective action will need to be taken instead of discharge into the creek.	Bennett W. Chambers-ORPA	Gary Greiner	Correspondence	4
2A12	4	84 12 22	Summary of the site: disposal practices and enforcement history	McNeely-Sandusky Co. Health Dist.	Mike Walker - USEPA	Correspondence	5
2B2	1	82 01 06	Points and concerns that should be addressed in efforts to close pond #4.	Charles Wilheim-ORPA	Dan Papke-USEPA	Correspondence	6
2B4	1	82/10 26	Letter giving current status of the site and that a	Basil Constantelos-USEPA	Kerik-Sandusky Co. Health	Correspondence	7

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			planned removal is being considered.				
2 B5	3	87/08/07	Notice that a removal action will take place along with an offer to allow the recipient of this letter to perform Phase I of this operation.	Basil Constantelos-USEPA	Ross Austin - DuPont	Correspondence	8
2 B8	2	87/08/07	Notice that a removal action will take place along with an offer to allow the recipient of this letter to perform Phase I of this operation.	Basil Constantelos-USEPA	Ross Austin- du Pont	Correspondence	9
2 B10	2	87/08/18	Response to USEPA letter dated 8/7/87 where it is requested that the recipient help perform Phase I Removal activities. Recipient declines such involvement in the Phase I Removal.	Kenneth Stroup-Allied Signal	Mary Hay-USEPA	Correspondence	10
2 B12	1	87/08/18	Company declines to undertake the removal action as requested by the USEPA letter of 8/7/87 and denies any liability.	R.E. Austin- du Pont-	Mary Hay-USEPA	<del>Correspondence</del>	
2 B13	1	87/08/26	Response to Notice Letter of 8/7/87. Lubrizol declines at this time to perform Phase I of the Removal Action.	Philip Krug - Lubrizol	Mary Hay - USEPA	Correspondence	12
2 C2	2	87/09/15	Letter addressing the possibility of the use of "in situ vitrification" for the immobilization of inorganic materials and the destruction of organic materials (with out attachment).	Mary Gade - USEPA	Roger Hannaba - USEPA	Correspondence	13

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2C4	2	07/10/82	List of guidelines to be followed by Lubrizol's consultant when on the site.	Pauline LeBlanc-USEPA	David Cowen - Lubrizol	Correspondence	14
2C6	2	08/04/82	Concerns of Lubrizol that arose as a result of activities by the USEPA and/or its contractors.	David Cowen - Lubrizol	Ed Burk - USEPA	Correspondence	15
2C8	2	08/06/82	Information in response to Lubrizol's observations and concerns.	Peggy Andrews - USEPA	David Cowen - Lubrizol	<del>Correspondence</del>	<del>15</del>
2C10	12	01/07/87	Draft plan of action outlined for correction of the problems at the Greiner Lagoons site.	Ben Chambers-ORPA	Don Schwaderer-ORPA	Memorandum	17
2D8	4	03/19/83	Report on investigation: on-site investigation and collection of soil samples and preparation of a preliminary hydrogeological evaluation (annotated).	R.M. Briesch-Ecology & Environment	File	Memorandum	18
2D12	22	04/11/83	Follow-up to on-site inspection. Results of three surface soil samples and site map are attached.	R.M. Briesch-Ecology & Environment	File	Memorandum	19
2F7	2	02/02/80	Ground water conditions.	Russ Stein - ORPA	Ben Chambers-ORPA	Memorandum	20
2F9	4	02/07/81	Request for Funding Approval Immediate Removal Action.	Greg Vanderlaan-USEPA	Hans Crump - USEPA	Memorandum	21
2F13	3	06/06/83	ACTION MEMORANDUM: Site Stabilization Request for Greiners Lagoon Site, Fremont, Ohio.	Peter Neathercut-USEPA	Valdas Adankus-USEPA	Memorandum	22
2G2	3	06/06/87	ACTION MEMORANDUM: Confirmation of Verbal Approval Request	Peter Neathercut - USEPA	Valdas Adankus - USEPA	Memorandum	23

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2 G5	3	07/05/28	Discussion of the possible use of "in situ vitrification".	Robert Bowden-USEPA	Timothy Fields-USEPA	Memorandum	24
2 G8	5	07/08/07	ACTION MEMORANDUM: Site Stabilization for Greiners Lagoon Site, Premont, Ohio.	Ed Burk - USEPA	Basil Constantelos-USEPA	Memorandum	25
2 G13	6	07/11/04	ACTION MEMORANDUM: Site Stabilization Request for Greiners Lagoon Site, Premont, Ohio (Ceiling Increase).	Ed Burk - USEPA	Basil Constantelos-USEPA	Memorandum	26
3 A5	6	07/11/24	ACTION MEMORANDUM: Ceiling Increase Request for Greiners Lagoon Site, Premont, Ohio.	Ed Burk - USEPA	Basil Constantelos-USEPA	Memorandum	27
3 A11	1	00 00 00	Greiners Lagoons- Sandusky County History.			Other	28
3 A14	31	00 00 00	Daily Work Reports	Burk-USEPA & Burrows-MacCorp		Other	29
3 G11	32	00 00 00	Daily Work Orders	Burk-USEPA & Burrows-MacCorp		Other	30
4 F9	1	06 05 20	Oil Hazardous Substances Discharge Report.	R.W. Bowlus-USEPA	USEPA	Other	31
4 F10	55	07 00 00	Photographs of site conditions.			Photographs	32
5 C12	14	06 05 01	Site Assessment	Burk-USEPA & Springer-Weston	Brian Wu-USEPA	Report/Studies	33
5 D12	4	00 00 00	Extent of Contamination Study Sampling Plan.			Reports/Studies	34
5 E4	17	00 00 00	Air Monitoring Program with attached data.			Reports/Studies	35

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6 F12	6	80/09/17	Letter report on off-site inspection with attached Preliminary Assessment as updated by the TIT Team.	Anne Sause-Ecology & Environment	Rene Van Soneren-E & E	Reports/Studies	36
5 G4	128	82/06/25	Greiners Lagoons Phase I Clean-up.	Scott McCone-Ecology & Environment	Joe Predle-USEPA	Reports/Studies	37
7 B5	72	83/04/00	On-Scene Coordinators Report: Greiners Lagoons Phase I.	USEPA		Reports/Studies	38
7 G10	11	94/08/10	Site Assessment Safety Plan.	Edward Burk-USEPA	USEPA	Reports/Studies	39
8 A14	56	94.11.00	Site Assessment	Weston-Sper TAT	USEPA	Reports/Studies	40
8 F7	35	95 02.00	Emergency Action Plan	Weston-Sper TAT	USEPA	Reports/Studies	41
9 B7	5	86/05/20	Hazardous Waste Site Investigation And Emergency Response Safety Plan.	Dave Hartman-Weston Sper TAT	USEPA	Reports/Studies	42
9 B12	15	86 11 12	Detailed account of actions taken on May 20, 1986 during the Emergency Removal Action.	Bartmann & Springer-Weston Sper TAT	Michael Strimbu-USEPA	Reports/Studies	43
9 C13	118	87 01 16	Proposal: Demonstration of In Situ Vitrification Technology for Remediation of Oil Sludges and Contaminated Soils at Greiners Lagoon Site Near Fremont, Ohio.	Battelle-Northwest	Maccorp Corp.	Reports/Studies	44
10 E11	41	87 09.25	Hazardous Waste Site Investigation Plan And Emergency Response Safety Plan.	Elise Allen-Weston Sper TAT	USEPA	Reports/Studies	45
11 B3	62	87/08/28	Site Safety Plan	Maccorp, Roy F. Weston & USEPA	Ed Burke-USEPA	Reports/Studies	46



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81/06/22	Project 430 - sample analysis.	San Insalaco-OMH Materials	Dan Papcke-USEPA	Sampling/Data
82/07/12	Environmental Sample Submission Report. Results of testing for PCB's on thirteen samples.	M. Gaither-ORPA	ORPA Emergency Response	Sampling/Data
82/05.19	Analytical results for Data SET SF 1580.	William Sanders-USEPA	Donal Constantelos-USEPA	Sampling/Data
86 10 16	Results and summary table from the 9-26-86 sampling.	Dave Hartman-Roy W. Weston, Inc.	Pete Heathercut-USEPA	Sampling/Data
86 10 15	Analytical Report - Project #86CT12	Marvin Stephens-Wadsworth/Alert D. Hartman-Roy Weston, Inc.		Sampling/Data
86 11 15	Results of analysis of five oil samples collected on 10-22-84. Samples were analyzed for EPA Task 1 & 2 Total Metals and three samples had the EP Toxicity Test for leachate metals performed upon them.	Timothy Lavey-Alert Labs	S. Springer-Roy Weston, Inc	Sampling/Data
84 11 13	Summary of analytical methods and quality control used in analysis of the Greiners Lagoon samples.	Jack Custer-Alert Labs	S. Springer-Roy Weston, Inc	Sampling/Data
84 10 25	Review and data set: EPA Data Set No. SF654, Sample No. NE 4582.	Chuck Eilly-USEPA CRL	Geoff Wackin-TAT	Sampling/Data
85 01 03	PCB Analysis - Greiners Lagoon.	Marvin Stephens-Wadsworth Testing	KJ Burke-USEPA	Sampling/Data
86 00 00	Inorganic Sample Results from Wadsworth Testing	Wadsworth Testing Laboratories		Sampling/Data
84 10 02	Review and Data Set: EPA Data Set No. SF654 Sample No. X 3143.	Chuck Eilly-USEPA CRL	EDC-TAT-CDO	Sampling/Data
87/00/00	Field Sample Data Sheets	TAT	USEPA	Sampling/Data

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86/05/29	Volatile Compound and PCB Analysis-- Results.	Wadsworth/Alert Labs	USEPA	Sampling/Data
87/10/13	Analytical Report - Project No. OH523.	Bob Peters-Wadsworth/Alert Labs	Carl Enlund-Maecorp	Sampling/Data
87/09/17	Analytical Report - Project No. OH523.	Bob Peters-Wadsworth/Alert Labs	Freddie Walker-Maecorp	Sampling/Data
87/10/02	Analytical Report - Project OH523	Bob Peters-Wadsworth/Alert Labs	Deanne Geile-Maecorp	Sampling/Data
87-10-13	Results of samples taken on 9-12, 9-13, and 10-6-87. Tested for total PCB's.	Roy Frederick-Gulf Coast Labs	Fred Walker-Maecorp	Sampling/Data
87-10-05	Analytical Report - Project No. OH523.	Bob Peters-Wadsworth/Alert Labs	Douglas Geile-Maecorp	Sampling/Data
87-10-21	Analytical Reports: Samples No.'s 89 177047, 89 177048, and 89 177049.	R.W. Letwin-Thermo Analytical Inc.	Freddie Walker-Maecorp	Sampling/Data
87-09-15	Analytical Report- Project No. OH523	Bob Peters-Wadsworth Alert Labs	Freddie Walker-Maecorp	Sampling/Data
87-09-17	Analytical Report - Project No. OH523	Bob Peters-Wadsworth Alert Labs	Deanne Geile-Maecorp	Sampling/Data
87-11-04	Analytical Reports for samples with GCL's 116019 - 116034.	John Boudreau-Gulf Coast Labs	Fred Walker-Maecorp	Sampling/Data
88-06-23	Analytical data for sample numbers 13551 - 13561 PCB Soil Analysis.	Fred Walker-Maecorp	Ed Burke-USEPA	Sampling/Data
88-01-03	PCB Analysis - Analytical Report	Marvin Stephens-Wadsworth Labs	Ed Burke-USEPA	Sampling/Data
88-02-17	Review of Greiners Lagoon PCB Data with attached Analytical Reports.	Patrick Churilla-USEPA	Ed Buke-USEPA	Sampling/Data

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88/02/08	Chromatograms for standards that were analyzed in conjunction with samples submitted by Maccorp on 9-3 and 10-7-1987.	Cledia Shaffer-Wadsworth/Alert Ed Burke-USEPA Labs		Sampling/Data
88/05/19	Analytical Results for sample numbers 13160 to 13161.	McLaughlin-Analytical/Biological Labs	Freddie Walker-Maccorp	Sampling/Data